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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,410	09/13/2004	Roger Y. Leung	H0002489 (4780)	6880

7590
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09/13/2007

EXAMINER

CAMERON, ERMA C

ART UNIT	PAPER NUMBER
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1762

MAIL DATE	DELIVERY MODE
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09/13/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/507,410	Applicant(s) LEUNG ET AL.	
	Examiner /Erma Cameron/	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 8, 9, 12, 18-21, 23 and 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claims 1, 8 and 9: it is not clear if the nucleophilic additive of claims 8 and 9 are the same or different from the nucleophiles of claim 1.

b) 12 and 21: it is not clear what "amu" stands for.

c) Claims 18-20: there is no antecedent basis for "step".

d) Claim 23: it is not clear if the alkyl chain and alkyl ether moiety are one and the same or not.

e) Claim 39: it is not clear how the entire compound can be considered a leaving group.

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Claim Objections

3. Claims 1-47 are objected to because of the following informalities:

There should be a consistent spelling for prepolymer (pre-polymer).

Appropriate correction is required.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-46 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-42 of copending Application No.

10/507411. Although the conflicting claims are not identical, they are not patentably distinct

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from each other because '410 does not claim that the porogen does not bond to the prepolymer, but both '410 and 411 use the same porogens.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 34-37 and 44-47 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by EP 1142832.

'832 teaches a porous, low dielectric Si composition also comprising tetramethylammonium^{acetate} as a nucleophilic additive and propylene glycol monopropyl ether as porogen, to be used in a spinning process (see Abstract; [0008] [0042] [0048]). The composition has low levels of alkali metal impurities. The effect of lowering T formation would be inherent in the composition.

8. Claims 34-36, 38-40 and 43-47 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by WO 2001/86709.

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'709 teaches a porous low dielectric Si-based film with tetraacetoxysilane and methyltriacetoxysilane, polyethylene glycol monomethylether or polypropylene glycol monobutyl ether as porogen and an amine or acid catalyst or tetramethyl ammonium hydroxide for a spin coating process (2:29; 3:26-32; 4:20-29; 13:1-8; 15:14; 18:10-21; 22:11). The effect of lowering T formation would be inherent in the composition.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1142832 or WO 2001/86709 taken in view of Jiang (6673847).

'832 and '709 are applied here for the reasons given above.

Neither reference teaches the ethers of claims 41 and 42 as porogen.

'847 teaches polyethylene glycol dimethyl ether as a porogen. The polypropylene ether of claim 41 would be a homolog to this.

It would have been obvious to substitute the porogen of '847 or its propylene homolog into the '832 or '709 processes, with the reasoned expectation of success in substituting one conventional porogen for another.

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11. Claims 1-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO2001/86709.

'709 is applied here for the reasons given above.

'709 teaches the inventive process (3:26-32), including a heating step as part of step c) at 25-200 degrees C, the silane precursor compounds as claimed with MW 150-10000, porogens with the properties claimed by claim 17 and 21, amines, tetramethylammonium hydroxide, solvents such as alcohols, and water as the composition to be spin coated to a film of 1.5-3.8 k and pores <10 nm. '709 does not refer to step c) as crosslinking, but it would appear that because the same materials and processes are used, that crosslinking will occur in c) (3:21-32; 4:1-5:31; 6:18-25; 10:1-9; 11:33-12:34 ; 14:14-15:15; 16:5-17:2; 18:10-25)

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Erma Cameron/ whose telephone number is 571-272-1416. The examiner can normally be reached on 8:30-6:00, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Erma Cameron/
Primary Examiner
Art Unit 1762

September 11, 2007